Installation and operating instructions

KEMPER Free-flow combined stop and check valve
Figure 137

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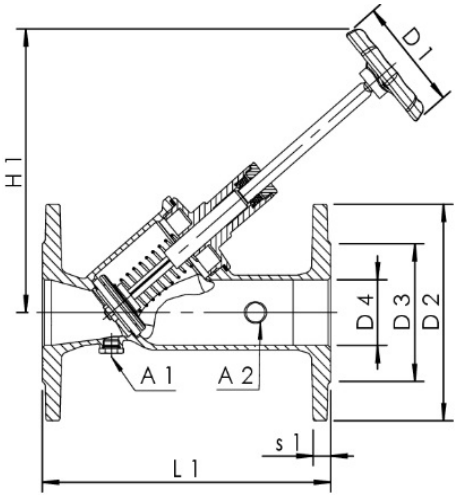
1 Area of application

The KEMPER free flow combined stop and check valve (KRV) Figure 137 is a protection valve EA as per DIN EN 1717/DIN 1988-100 and is used to protect building drinking water installations of fluid category 2. The lines downstream in the direction of flow are thus protected against back pressures and siphon back flow. The valve function can be checked on the provided test device. A drain valve or pressure measurement device can be attached to it.

Technical properties:

- Metal parts that have contact with medium made of dezincification-free gunmetal
- EPDM seat gasket
- Maintenance-free stem seal with self-lubricating EPDM lip seal
- With stop function
- Stainless steel closing spring
- Suitable for horizontal and vertical installation
- Drain vale lateral, with rotatable G ¾" hose connection (Figure 137 02)
- With test device
- Cone supported rotatable
- Plastic parts with KTW- and W270 approval
- As per DIN EN 13959 and DIN EN 558-1
- Stagnant-zone-free
- With brown handwheel
- Flange connection



2 Technical data, dimensions

Pressure stage PN 16
Maximum operating temperature 100°C

2.1 Dimensions Figure 137

Nominal width	DN	50	65	80	100
A1		G 3/8	G 3/8	G 3/8	G 3/8
A2		G 3/8	G 3/8	G 3/8	G 3/8
D1	mm	90	120	120	120
D2	mm	165	185	200	220
D3	mm	102	122	138	158
D4	mm	50	65	80	100
H1	mm	220	293	326	302
L1	mm	230	290	310	350
s1	mm	14	15	16	18
Opening pressure	hPa	70	120	140	140
Weight	kg	6.32	10.92	13.82	21.6
Max. flow rate (kvs)	m³/h	64.7	116	130	186
Zeta value		2.3	2.1	3.8	3.8

2.2 Materials

Materials	
Housing	Gunmetal
Head part, stem, cone	Gunmetal
Bonnet seal, stem seal	EPDM
V-seal	EPDM
V-nut, washer	Rustproof
Closing spring	Rustproof
Test plugs	Gunmetal
Handwheel	Plastic, brown

2.3 Configurations

The KEMPER free-flow combined stop and check valve, Figure 137, is available in 2 variants.

Figure Number	Description
137 01	Without drainage
137 02	Drain valve lateral, with rotatable G 3/4" hose connection and cap

3 Assembly and installation

Thoroughly flush the pipework before installation. The valve can be assembled in either the vertical or horizontal position; during this, be sure to comply with the direction of flow marked on the valve. An easily accessible installation location makes maintenance and inspection easier. Provide a shut-off device in the direction of flow in front of the valve to be able to properly monitor the anti-pollution check-valve. The valve with an upstream stop creates the EA protection unit. To permanently guarantee the flawless functioning of the valve, we recommend installing a drinking water filter as per DIN EN 13443-1 in the direction of flow in front of the valve (e.g., immediately after the water metering equipment).

For hygienic reasons, remove the flange guard in front of the valve just before installation.

Note:
When the supply pressure is applied, before opening the valve make sure that the drain and test device or the drain valve are closed and leakproof. Furthermore, ensure that the drinking water installation in the direction of flow after the valve is checked for leakproofness in accordance with the accepted codes of practice. That prevents water damages caused by unwanted water leaks.

4 Operation

The drinking water installation in the direction of flow can be stopped and secured with this valve. Turn the handwheel clockwise to stop; turn counter clockwise to re-pressurise the drinking water installation with drinking water and the full system pressure. During supply, water flows in the direction of flow through the valve and the integrated anti-pollution check-valve opens. If there is no supply, the anti-pollution check-valve closes through the previously pre-tensioned spring, which prevents the drinking water from backflowing in the opposite direction of flow. Take the pressure loss of the valve into consideration in the piping network calculation. Compliance with Chapter 5, "Maintenance and Repair", is mandatory to maintain the functioning over a long period of time.

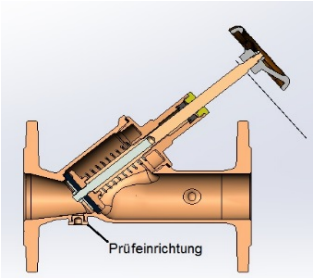
5 Maintenance and repair

In compliance with the standard on drinking water protection and hygiene regulations, the user/operating organisation is given the following specifications as defaults:

Compliant with DIN EN 1717, Section 4.6, regularly scheduled maintenance of the protection unit is required. According to the European-wide defaults of DIN EN 806-5, Table A.1, EA protection units have to be inspected and maintained once annually. Check their proper functioning in regularly scheduled intervals in compliance with the national or regional provisions. Inspect and maintain in compliance with DIN EN 806-5 Appendix B.5. The guaranty is voided in case of malfunctioning of the valve due to pollution.

Note: Solely an authorised specialist company is permitted to perform the installation and maintenance. Comply with the guaranty instructions!

5.1 Function test of the anti-pollution check-valve during maintenance

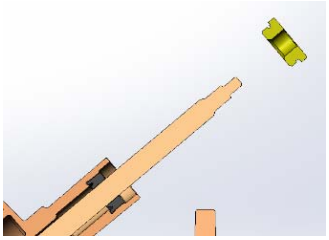


a) The KEMPER outlet-side line must be pressurised and it must be ensured that there is no flow (possibly ensure by closing a downstream valve)
b) The valve must not be closed
c) Close the stop valve before the anti-pollution check-valve and open the supply side test opening before the anti-pollution check-valve (see illustration to the right)
d) After draining the line, the flow must stop. If it does not stop, check the leak tightness of the stop valve before the anti-pollution check-valve and, if applicable, repair it
e) If the flow continues, replace the valve bonnet or the entire valve.

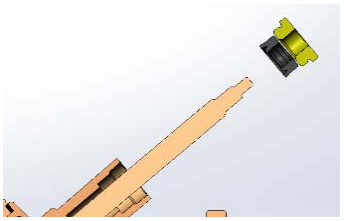
5.2 Replacing the stem seal

a) Close the valve and drain on the bonnet side

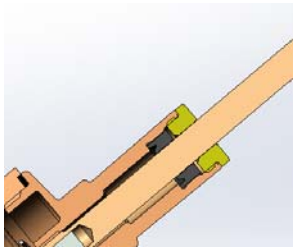
b) Dismantle the handwheel and the gland screw



c) Remove the lip seal with a sharp object (e.g. screwdriver); Be careful not to scratch the stem during this



d) Carefully push a new lip seal (with valve grease that does not contain mineral oil or with silicon grease) over the stem square and press into the bonnet with the gland screw. Screw the gland screw in at the same time



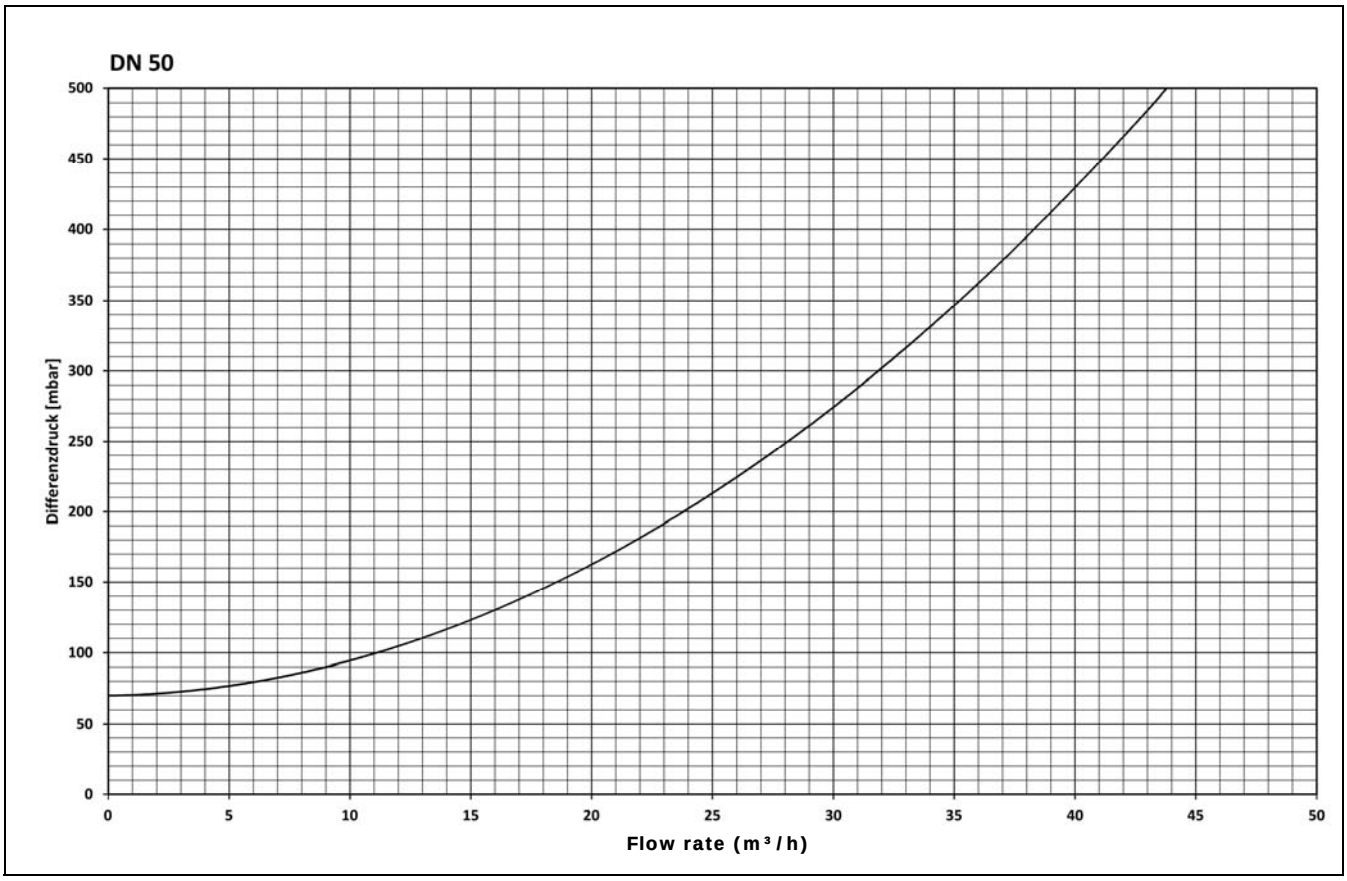
e) Assemble the handwheel and turn back just before the limit stop

6 Spare parts and accessories

Spare part number	Designation
C91001730304000	Replacement stem seal for DN 50 valves
C91001730306500	Replacement stem seal for DN 65, DN 80, DN 100 valves
C31001730705000	Replacement bonnet seal for DN 50 valves
C31001730706400	Replacement bonnet seal for DN 65 valves
C31001730708000	Replacement bonnet seal for DN 80 valves
C31001250510000	Replacement bonnet seal for DN 100 valves
	On request, the entire bonnet can be offered in the respective nominal width

Accessory number	Designation
410 00	Lap-joint flange for flanged shoulder rings
410 FP	Flange pair made of lap-joint flange with copper shoulder rings; with seals and rustproof screws
425 00	Shoulder rings
426 00	Threaded flange PN 10/16
426 FP	Threaded flange pair PN 10/16; with seals and rustproof screws
427 00	Blind flange
428 00	Flange seal
429 M	Rustproof screws
187 00	Sampling valve
J7109 173 00	Drain valve made of gunmetal/plastic

7 Flow diagram for KEMPER free-flow combined stop and check valve Figure 137, DN 50



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We reserve the right to make technical changes

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